EMTiming System

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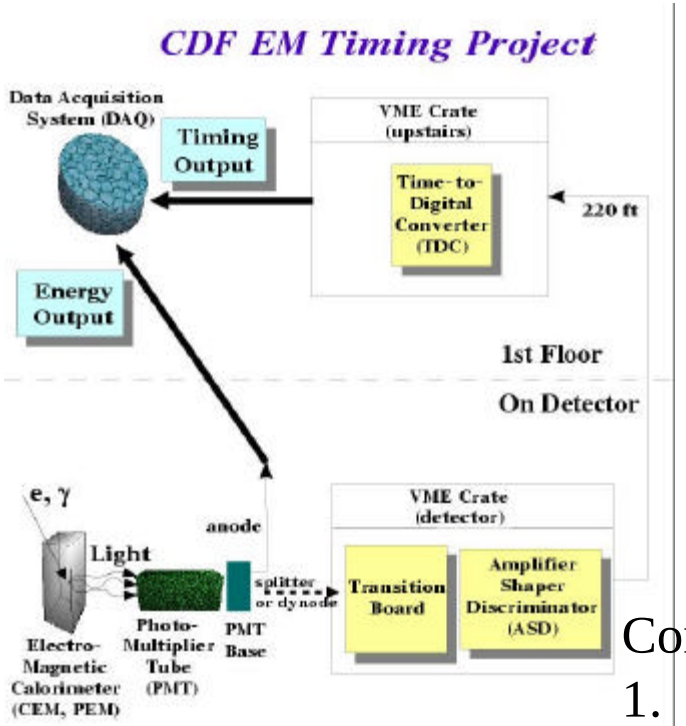
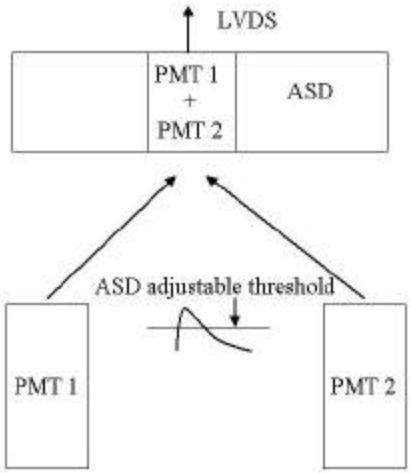




CEM(0,23) + PEM

Completed by now:

1. VME crate with all 10 TDC boards installed
2. Readout software is written and operational
3. 220ft cables from ASDs to TDCs (all)
4. ASDs and TBs: built and tested
5. Signal cables from PMTs to TBs:built, tested
6. All hardware is complete, debugged and ready be installed

System Checkout

All channels alive?

Any noise?

Quality of data => Timing resolution?

For complete commissioning should use beam data

Status now: for plug used a combination of

Plug Laser runs + Cosmics (next slides)

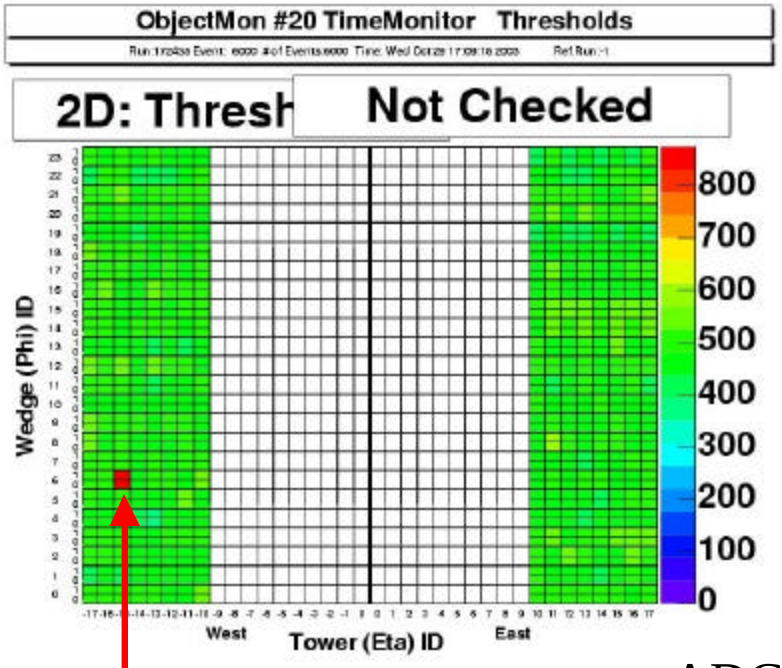
CEM: 4 wedges finished, looking at the data

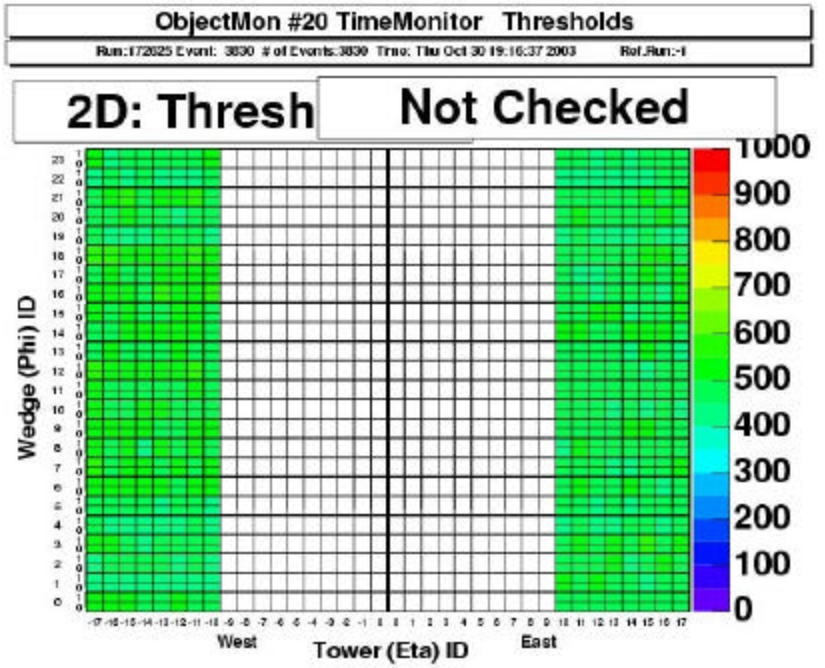
Can we check the system without beam?

Plug EMTiming Status

Plug Laser

Plug is installed, some problems were found, fixed.
Energy thresholds are set to ~500 ADC counts(~1.5 GeV)





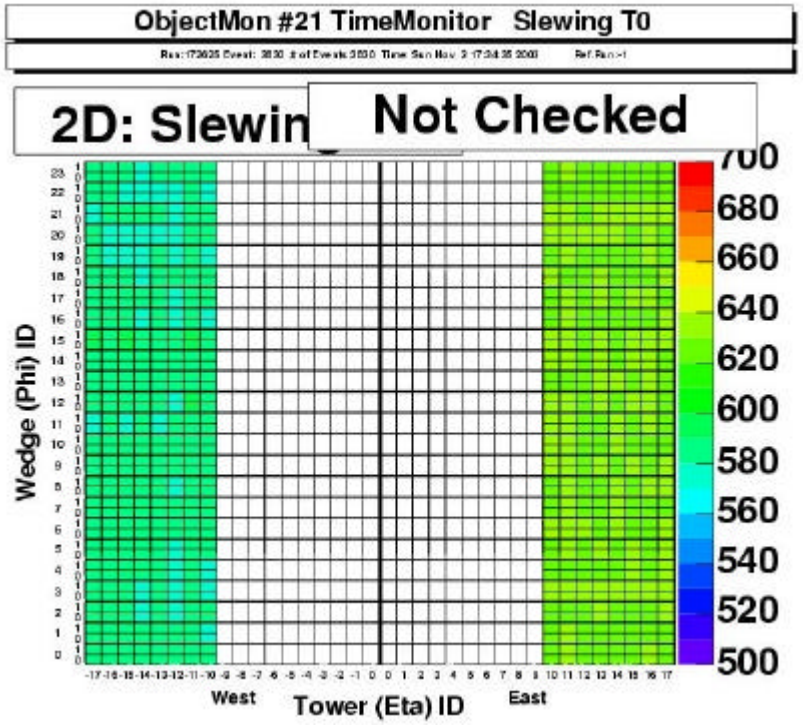
ADC counts

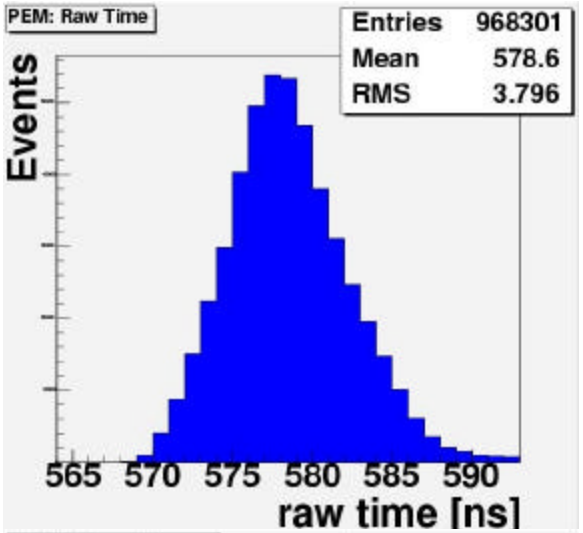
Lemo short at the Transition Board

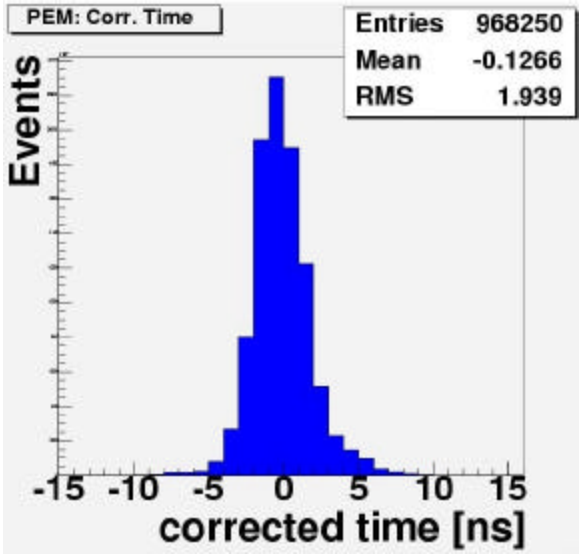
Now: all channels are working

Initial installation > 96% of channels came up working

Energy Slewing, T0





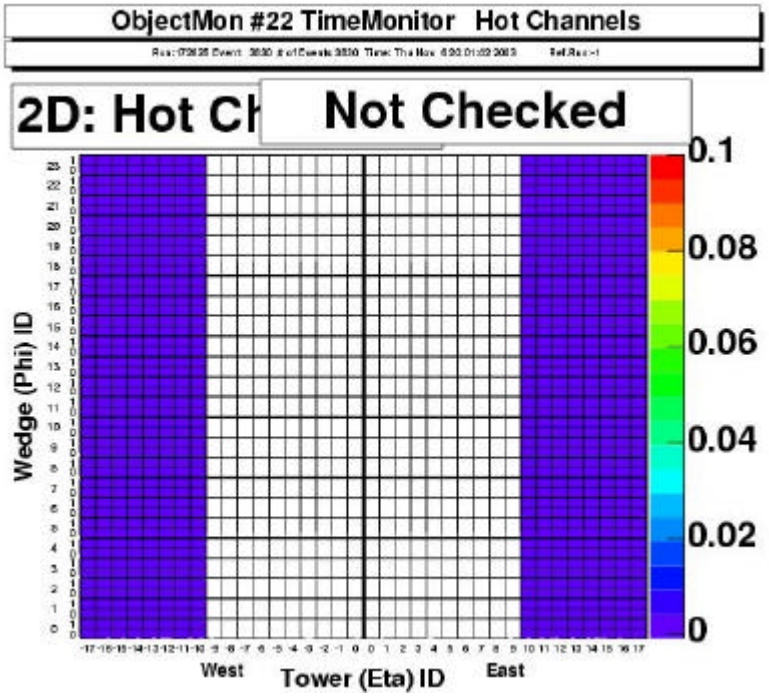


Energy Slewing: T0 + Slewing/sqrt(E)

Resolution ~ 2 nsec

Noise in the System

Cosmic Run
~ 100K events



None

Noise=N(TDC hits)/N
N – number of events
Only events with Energy < ASD threshold

Status and Plan for PLUG

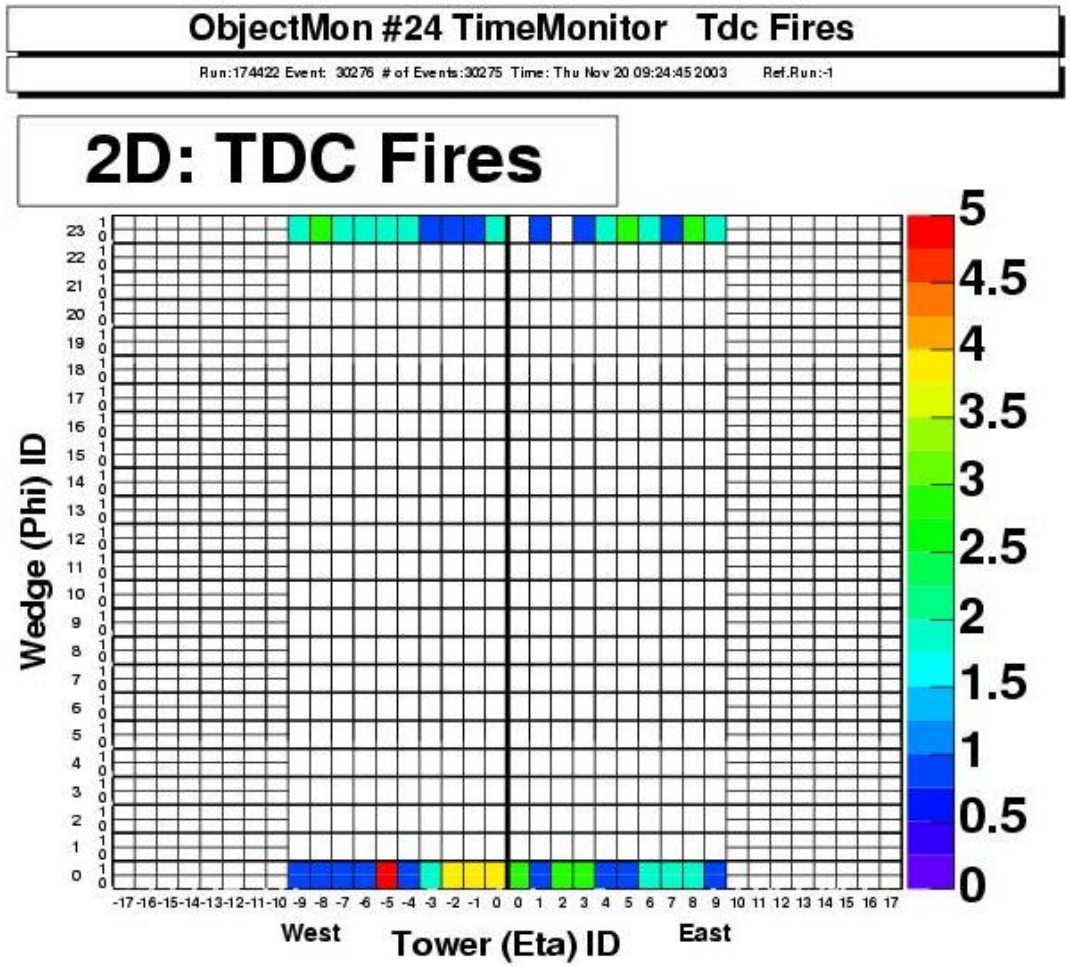
Plug is fully installed: No installation problems
after installation * TB->ASD->TDC 100%
* PMT->TB 96%
have very fast and efficient method for checking

Now:
1) ASD fires when we expect it to; 100%
above energy threshold of ~1.5 GeV/Tower
2) Doesn't fire when it isn't supposed to; low noise
3) Timing resolution is ~2nsec

Short-term commissioning Plan:
- check the system with beam data
- calibrations
- user friendly software

CEM EMTiming Status

Cosmic Run



Count TDC fires

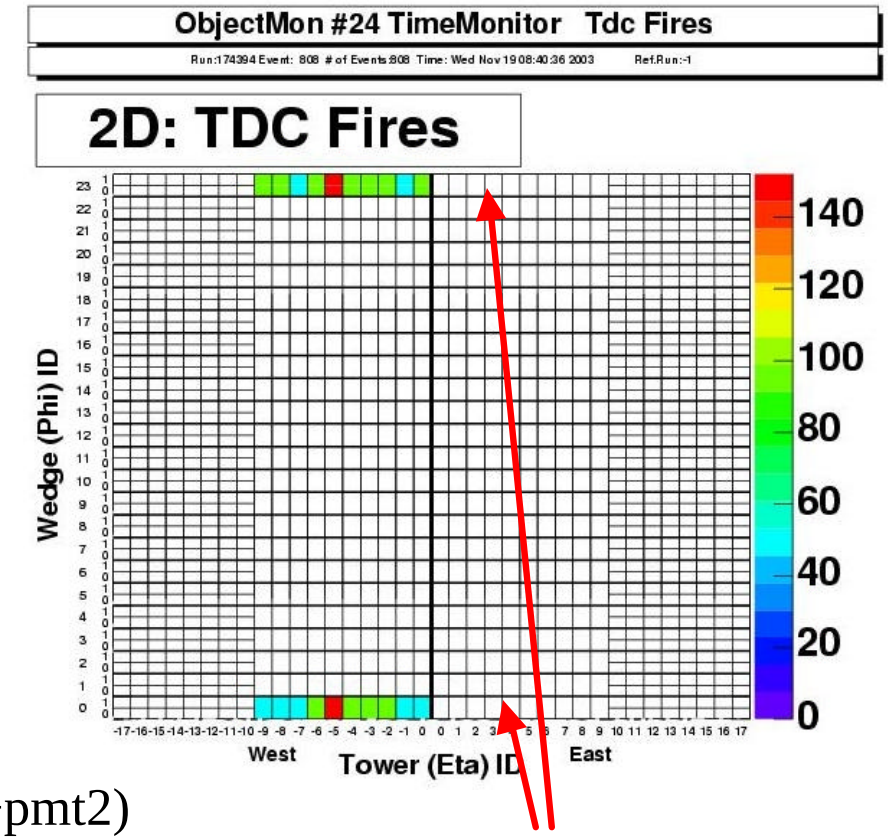
- Need more data
- No Hot Towers

All TDCs and ASDs are working in the east

CEM EMTiming Status

CEM LED

Count TDC fires



A = (pmt1-pmt2)/(pmt1+pmt2)
Try: A > 0.8 or A < -0.8
Do the same for CEM spike data
Do the same for beam data

LED not flashing in the East

Status and Plan for CEM

Installation Problems

- Blown fuses on 2 other boards (fixed): have to power down the crate
- No pulses from CEM LED cards (slot 12) in the North-East, next to ASD in slot 11: experts are working
- Mystery with Shower-Max in the North-East. Installation problem? North-West is fine.

Wedges 0 and 23 installed (east and west)

After installation * TB->ASD->TDC 100%
* PMT->TB checking out
probing different method for the best checkout procedure (CEM LED, PMT spike, … ?)

install the rest of the CEM at the next available opportunity. Currently scheduled for Shutdown 2004